

**Remarks:**

Claims 1 - 12 remain pending in the application. Applicants note the previous rejections under 35 U.S.C. 112 have been withdrawn. The Claims remain rejected under 35 U.S.C. 103 for the various reasons discussed below.

Claims 1 - 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Batts et al. The Office maintains its position that the six specifically enumerated compounds of Batts et al read on compounds of formula 1. Applicants again disagree. None of the compounds of Batts et al. contains a sulfur atom, at least none are thioamides. The letter "S" appearing in the names of these six compounds refers to the stereochemical orientation of the compounds and does not indicate the presence of sulfur in the named compounds. In each of the compounds of Batts et al. the sulfur atom indicated in the compound of the instant invention, that is, the indicated sulfur atom in the formula A-G-CH<sub>2</sub>-NH-C(=S)-R<sub>1</sub>, is replaced by an oxygen atom, that is, A-G-CH<sub>2</sub>-NH-C(=O)-R<sub>1</sub>. Applicants submit that clearly the Office's position is in error and should be reconsidered and withdrawn.

Applicants certainly agree with the Office that bacterial infections can be associated with bone loss. Applicants prior statement noted by the Examiner was made in the context of a discussion of Batts et al where Applicants submit Batts is referring to rheumatoid arthritis not osteoarthritis and that rheumatoid arthritis is not known to be associated with bacterial infections. Indeed in Batts et al, page 1, lines 32 - 36, a distinction is made between arthritis caused by bacterial infection, caused by degeneration of articular surfaces, caused by immunologic reactions, and caused by other matters. Clearly Batts et al. makes a distinction between arthritis caused by and not caused by bacterial infection. Clearly the implication of this statement in Batts et al. is that arthritis caused by degeneration of articular surfaces (osteoarthritis) and caused by immunologic reaction against joint tissues (rheumatoid arthritis) is not caused by bacterial infection.

Indeed in the sentence spanning page 1 and 2 of Batts et al. it is indicated that inflammation, not bacterial infection, is the "common thread" in these diseases. Batts et al. continues in the sentence at page 2, lines 1 - 3, where it is indicated that "...therapeutics for arthritis are not curative unless the arthritis is infectious and the underlying pathogen is eliminated by an antibiotic." Clearly this indicates that other types of arthritis not caused by infectious agents are thus not treatable with antibacterial agents. Finally Batts et al indicates that the compounds disclosed therein are acting to relieve pain and

inflammation, see page 2, lines 5 - 7. In this way the compounds disclosed in Bates et al. are effective in the treatment of arthritis, even arthritis not caused by bacterial infection.

The Office states that arthritis is "...known to be tightly associated with bone diseases, osteoporosis and bone resorption, to induce bone destruction, and to stimulate bone matrix loss". Nair et al. is cited to support this statement. Applicants disagree with much of this conclusion.

Applicants do not agree that Nair et al. teaches that osteoporosis (not osteoarthritis) is associated with bacterial disease. Nair et al. in the first sentence of the introduction (Osteoporosis is not mentioned at all within the text of Nair et al.) states that osteoporosis is an idiopathic bone disease. By definition an idiopathic disease is one whose origin and cause is unknown. Thus applicants submit that Nair et al. clearly teaches that the cause of osteoporosis is not known and thus is not known to be associated with bacterial infection. Further applicants are unaware of any teaching that antibacterial agents are useful in the treatment of osteoporosis. As such, applicants believe that this basis of rejection should be withdrawn to the extent that it has been applied to the treatment of osteoporosis. Claim 1, now limited to the treatment of osteoporosis, should thus be allowable.

Further Nair et al. proposes three possible links between bacteria and bone loss (see page 2372, the sentence spanning column 1 and column 2). Nothing in Nair et al. discusses bone loss in the context of underlying diseases other than bacterial diseases. And nothing in Nair et al. suggests that antibacterial agents are useful in the context of limiting bone loss other than by antibacterial effect. And further yet, nothing in Nair et al. suggests that antibacterial agents **promote bone growth** as contrasted from the ability to **preventing bone loss** in certain circumstances.

While applicants do not believe that the treatment of osteoporosis with the thioamide oxazolidinone compounds employed in the claimed methods of this application are obvious, nevertheless the treatment of bone resorption (as distinguished from the treatment of osteoporosis) must be separately considered. Clearly in some instances bacterial infection can cause or be associated with the loss of bone tissue. However, not all bone resorption is caused by or associated with bacterial infections. Clearly it was not known nor suggested that treatment of bone resorption not caused by or associated with bacterial infections could be treated with antibacterial agents. Thus Applicants' submit that claim 6, limited to the treatment of bone resorption (and osteoporosis) not caused by or associated with bacterial infections should be considered nonobvious and such claim should not be rejected.

Additionally Applicants' submit that the thioamide oxazolidinone compounds used in the claimed methods of this application to treat osteoporosis and bone resorption caused by and associated with bacterial infections (that is, those not included within the scope of claim 6) are nevertheless nonobvious because such treatment is not inherent in the treatment of bacterial infections. Inherency occurs only where the practice of the prior art inevitably results in the presently claimed invention and where the result was recognized. Applicants' submit that the prior art suggests, at most, that bone resorption caused by bacterial infection can be treated, in part, by administration of an antibacterial agent. Applicants' submit that the prior art does not suggest that bone resorption not caused by bacterial infection can be treated with the compounds of this invention. Nor does the prior art teach that bone resorption caused by bacterial infection can be treated by prior art antibacterial agents independent of the antibacterial activity of such compounds. Finally applicants submit that it was clearly not appreciated in the prior art that in treating certain bacterial infections and thus preventing further bone loss, bone formation was being encouraged by such agents. Because this result was not appreciated, such result cannot be obvious. Thus a withdrawal of this basis of rejection is requested.

Claims 1 - 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hester et al. in view of Nair et al. and claims 7 - 12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. in view of Nair et al. Hester et al. and Yoshida et al have been applied to establish that certain thioamide oxazolidinones are known to be antibacterial agents, and Nair et al. has been applied to establish that bacterial disease is associated with bone loss in certain diseases. Applicants respectfully traverse this rejection for the following reasons.

Applicants do not dispute that some of the thioamide oxazolidinone compounds of the methods of this application are known in the prior art to have antibacterial activity. Applicants, however, as detailed above, do not agree that Nair et al. teaches that osteoporosis (not osteoarthritis) is associated with bacterial disease. Again applicants submit that the Claims 1-5, now limited to the treatment of osteoporosis, are not properly rejected and that this rejection should not be applied to these claims. Likewise applicants do not believe that this rejection is proper with regard to those claims limited to diseases not caused by bacterial infection, that is claims 6 and 12.

Further for the reasons discussed above, applicants do not believe that the prior art suggests that antibacterial agents including thioamide oxazolidinones are useful in promoting bone growth as

contrasted with preventing bone loss. This is clearly not obvious in view of the prior art and thus these rejections should be withdrawn.

In conclusion, applicants submit that the cited prior art does not render obvious the use claimed in this application. Applicants thus respectfully request that the various remaining rejections be reconsidered and withdrawn. As such applicants eagerly await a favorable action from the Office in due course.

Respectfully submitted,



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